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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,023	08/27/2003	James Bertram Blackmon	7784-107/ DVA	5133
27572 7590 02/28/2007 HARNESSE, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER WARD, JESSICA LEE	
			ART UNIT	PAPER NUMBER
			1733	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/28/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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**Office Action Summary**

Application No.

10/649,023

Applicant(s)

BLACKMON ET AL.

Examiner

Jessica L. Ward

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/16/07, RCE.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-15,17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***RCE***

1. The request filed on 1/16/07 for a RCE under 37 CFR 1.114 based on parent Application No. 10/649,023 is acceptable and a RCE has been established. An action on the RCE follows.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3-15 and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, it is unclear how the reinforcing structure can be formed by applying a resin in a liquid state to the reinforcing member after the glass member has already been provided with the reinforcing member. According to the specification, the resin is applied to the reinforcing member to form the reinforcing structure and then the glass member is provided with the reinforcing structure (p. 6, lines 3-6). Applicant is asked to clarify. It is suggested to delete "and a reinforcing member" from lines 2-3 and amend line 7 to state --a reinforcing member--.

Also regarding claim 1, it recites the limitation "the mounting" in line 9. There is insufficient antecedent basis for this limitation in the claim. It is suggested to delete "the" from the claim.

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With respect to claim 11, it recites the limitation "the mounting" in line 9. There is insufficient antecedent basis for this limitation in the claim. It is suggested to delete "the" from the claim.

With respect to claim 19, it is unclear how the cured resin, reinforcing member and support structure cooperate to form a rigid interlayer that supports the glass member and facilitates mounting of the assembly. According to the specification, only the cured resin forms the rigid interlayer (p. 5, 2<sup>nd</sup> paragraph) while only the support member supports the glass member and facilitates mounting of the assembly (p. 3, lines 4<sup>th</sup> paragraph). Applicant is asked to clarify.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 11-15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schreiber et al. (US 3382137, of record) in view of Mertens et al. (US 4435043).

With respect to claim 11, Schreiber teaches a method for forming a mirror assembly (column 4, line 63) by applying a resin 11 to the rear surface of the mirror 10 and curing the resin, wherein the resin shrinks as it cures and applies a compressive force to the rear surface of the mirror (Figure 1; column 1, lines 13-25; column 1, lines 55-61; column 1, line 71 – column 2, line 3; column 2, lines 8-11 and 25-27 and 34-38 and 50-54; column 4, line 63).

The reference teaches the assembly being used as a mirror (column 4, line 63) and therefore one would readily appreciate that this would only be possible if the mirror had a front surface associated with light reflection. However, if this is not taken as so, it would have been

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obvious to one having ordinary skill in the art to provide the rear surface of the mirror of Schreiber with a reflective coating such that the front surface is associated with light reflection because such is known in the mirror art, as taught by Mertens (abstract; column 5, lines 4-15).

It is unclear as to whether Schreiber teaches providing a reinforcing structure and securing it to the rear surface of the mirror with the reinforcing structure supporting the mirror and facilitating mounting of the mirror. It is known in the art to form a mirror by securing two glass sheets 1, 5 together via a bonding layer 4 and then secure a reinforcing structure 8/13/14 to the rear surface of the mirror to support and facilitate mounting of the mirror, as taught by Mertens (Figures 1 and 3; column 5, lines 4-15; column 6, lines 31-45). Therefore, it would have been obvious to one having ordinary skill in the art to secure a reinforcing structure to the rear surface of Schreiber's mirror because such is well known in the mirror art, as taught by Mertens, for supporting and facilitating mounting of the mirror.

Regarding claim 12, Schreiber teaches such. Regarding claims 13-14, it would have been obvious to one having ordinary skill in the art to preform Schreiber's mirror such that the front surface conforms to a non-flat shape because such is known in the mirror art, as taught by Mertens (Figure 3). Regarding claim 15, Schreiber teaches such (column 2, lines 28-40). Regarding claim 17, Schreiber in view of Mertens teaches such. Regarding claim 18, Schreiber teaches such (column 2, lines 25-27).

With respect to claim 19, all the limitations were addressed above with respect to claims 11-12 and 18, except a reflective material associated with a surface of the glass panel to effect light reflection, forming the glass member such that the light reflecting surface conforms to a predetermined shape, applying the resin in a liquid state, and applying a reinforcing member and

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at least one support structure to the glass member opposite the light reflecting surface and the resin.

It would have been obvious to have a reflective material associated with a surface of the glass panel of Schreiber to effect light reflection because such is known/necessary in the mirror art, as taught by Mertens (abstract; column 5, lines 4-10), in order to achieve light reflection. It would have been obvious to form the glass member of Schreiber such that the light reflecting surface conforms to a predetermined shape because such is known in the mirror art, as taught by Mertens (Figure 3), where shape imparts desirable properties to the mirror. Schreiber teaches the resin applied in a liquid state (column 3, lines 8-10). Schreiber in view of Mertens teaches applying a reinforcing member and at least one support structure to the glass member opposite the light reflecting surface and the resin (Figure 3; note reference numbers 8 and 13/14, respectively).

6. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schreiber et al. and Mertens et al. as applied to claim 11 above, and further in view of Gee (US 4571812).

If it is not taken that Schreiber in view of Mertens teaches the mirror being “preformed” to a non-flat shape, such would have been obvious in light of the teaching of Gee (column 2, lines 37-51 and 64-68; column 3, lines 1-3) because it is easier to secure a reinforcing structure to a mirror that has already been formed.

7. Claims 11-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimodaira et al. (US 4807969, of record) in view of the collective teachings of Wildenrotter (US 4239344), Howden (US 4484798) and Kirsch (US 4436373).

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With respect to claim 11, Shimodaira teaches a method for forming a mirror assembly by providing a mirror 7 with a front surface that is associated with light reflection and a rear surface, applying a resin 3 to the rear surface, curing the resin, wherein the resin shrinks as it cures, providing a reinforcing structure 4a/5, and securing the reinforcing structure to the rear surface of the mirror (Figures 1-3; column 2, line 60 – column 3, line 4; column 3, lines 15-16; column 3, lines 25-38).

It is noted that it is the shrinking of the resin that causes it to apply a compressive force to the rear surface of the mirror of the present invention (p. 5, last four lines of last paragraph). Therefore, one would readily appreciate that the resin of Shimodaira, which also shrinks upon curing (column 3, lines 15-16), would likewise apply a compressive force to the rear surface of the mirror.

As for the reinforcing structure 4a/5 supporting the mirror of Shimodaira and facilitating mounting thereof, one would readily appreciate it being well known and conventional in the mirror art that a reinforcing structure, similar to that of Shimodaira, is inherently used to support the mirror, as evidenced by Wildenrotter (reinforcing structure 19/20 supports mirror; column 2, line 35 – column 3, line 1; column 4, lines 8-11). Furthermore, it would have been obvious to use the reinforcing structure of Shimodaira to also facilitate mounting of the mirror because it is well known and conventional in the mirror art to attach a structure to the rear surface of the mirror to support and facilitate mounting of the mirror, as evidenced by the collective teachings of Wildenrotter (column 4, lines 8-11), Howden (abstract; column 7, lines 12-15 and 45-48; column 8, lines 5-9), and Kirsch (Figure 5; column 4, lines 36-39).

Regarding claim 12, Shimodaira teaches such.

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Regarding claims 13-14, Shimodaira teaches such (Figure 2; column 2, lines 60-61).

Regarding claim 17, Shimodaira teaches the reinforcing structure having an interlayer 5 and a support structure 4a (Figure 3).

8. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimodaira et al. and the aforementioned collective teachings as applied to claim 11 above, and further in view of Gee.

If it is not taken that Shimodaira teaches the mirror being “preformed” to a non-flat shape, such would have been obvious in light of the teaching of Gee (column 2, lines 37-51 and 64-68; column 3, lines 1-3) because it is easier to secure a reinforcing structure to a mirror that has already been formed.

9. Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimodaira et al. and the aforementioned collective teachings as applied to claim 11 above, and further in view of Stang (US 4124277, of record).

Regarding claim 15, Shimodaira is unclear as to what type of resin. Selection of such would have been within purview of one having ordinary skill in the art; however, it would have been obvious to use a resin from Applicant’s claimed list because such is known in the art, as taught by Stang (column 3, lines 36-39).

Regarding claim 18, Shimodaira is unclear as to a thickness of the glass. Selection of such would have been within purview of one having ordinary skill in the art; however, it would have been obvious to use glass having a thickness that falls within Applicant’s claimed range because such is known in the art, as taught by Stang (column 3, lines 18-22).



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10. Claims 11-15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stang in view of Shimodaira et al. and further in view of the collective teachings of Wildenrotter, Howden and Kirsch.

With respect to claim 11, Stang teaches a method for forming a mirror assembly by providing a mirror 12 with a front surface that is associated with light reflection and a rear surface, applying a resin 16 to the rear surface, curing the resin, providing a reinforcing structure 16/18, and securing the reinforcing structure to the rear surface of the mirror (Figure 2; column 3, line 1 – column 4, line 30).

Stang teaches the resin being in the form of a prepreg 16 (fabric impregnated with uncured epoxy resin; column 3, lines 36-39), applying the prepreg to the mirror, and then curing the resin (column 1, lines 58-60; column 3, lines 34-47; column 3, lines 10-30). It is known in the art to form a mirror, similar to that disclosed by Stang, by applying a prepreg to a mirror and then curing the resin by heating, wherein the resin shrinks as it cures and consequently applies a compressive force to the rear surface of the mirror, as taught by Shimodaira.

Therefore, since epoxy resin is thermosetting and must be cured by heating, it would have been obvious to one having ordinary skill in the art to cure the resin of Stang by heating such that the resin shrinks as it cures and applies a compressive force to the rear surface of the mirror because such is known in the art, as taught by Shimodaira, where this improves the strength and durability of the mirror.

As for the reinforcing structure 16/18 supporting the mirror of Stang and facilitating mounting thereof, one would readily appreciate it being well known and conventional in the mirror art that a reinforcing structure, similar to that of Stang, is inherently used to support the

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mirror, as evidenced by Wildenrotter (reinforcing structure 19/20 supports mirror; column 2, line 35 – column 3, line 1; column 4, lines 8-11). Furthermore, it would have been obvious to use the reinforcing structure of Stang to also facilitate mounting of the mirror because it is well known and conventional in the mirror art to attach a structure to the rear surface of the mirror to support and facilitate mounting of the mirror, as evidenced by the collective teachings of Wildenrotter (column 4, lines 8-11), Howden (abstract; column 7, lines 12-15 and 45-48; column 8, lines 5-9), and Kirsch (Figure 5; column 4, lines 36-39).

Regarding claim 12, Stang in view of Shimodaira teaches such.

Regarding claims 13-14, Stang teaches such (Figures).

Regarding claim 15, Stang in view of Shimodaira teaches such (see claim 1 above).

Regarding claim 17, Stang teaches the reinforcing structure including an interlayer 18 and a support structure 16 (outermost layer).

Regarding claim 18, Stang teaches such (column 3, lines 20-21).

With respect to claim 19, all the limitations were addressed above with respect to claims 11-12 and 18, except a reflective material associated with a surface of the glass panel to effect light reflection, forming the glass member such that the light reflecting surface conforms to a predetermined shape, applying the resin in a liquid state, and applying a reinforcing member and at least one support structure to the glass member opposite the light reflecting surface and the resin.

As to the reflective material, Stang teaches such (column 3, lines 22-25). As to forming the glass member such that the light reflecting surface conforms to a predetermined shape, Stang teaches such (Figures 2 and 5). As to applying the resin in a liquid state, Stang teaches such

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(column 4, lines 10-20). As to applying a reinforcing member and at least one support structure to the glass member opposite the light reflecting surface, Stang teaches such (note reference numbers 16 and 18).

11. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stang, Shimodaira et al. and the aforementioned collective teachings as applied to claim 11 above, and further in view of Gee.

If it is not taken that Stang teaches the mirror being “preformed” to a non-flat shape, such would have been obvious in light of the teaching of Gee (column 2, lines 37-51 and 64-68; column 3, lines 1-3) because it is easier to secure a reinforcing structure to a mirror that has already been formed.

#### ***Response to Arguments***

12. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. Ward whose telephone number is 571-272-1223. The examiner can normally be reached on Mon-Fri between 9AM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica L. Ward  
Primary Examiner  
Art Unit 1733

A handwritten signature in black ink, appearing to read "Jessica Ward", with a long horizontal flourish extending to the right.